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09/878,475	06/11/2001	Kaori Kojima	15162/03230	1997

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EXAMINER

THOMPSON, TIMOTHY J

ART UNIT PAPER NUMBER

2873

DATE MAILED: 06/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/878,475

Applicant(s)

KOJIMA ET AL.

Examiner

Timothy J Thompson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-10, 16, 17 and 20-23 is/are allowed.
- 6) ☒ Claim(s) 11-15, 18 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11, 12, 18, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable Nagaoka (U.S. Patent No. 6,519,098) in view of URYU(U.S. Patent Pub. No. 2003/0011690) and Okuyama et al.(U.S. Patent No. 6,144,493).

Regarding claims 11 and 18, Nagaoka discloses from the object side thereof an imaging lens system that forms an optical image of a subject(fig 15, r1-r5),an optical low pass filter(fig 15, surface r6-r13); and an image sensing device that converts the optical image formed by the imaging lens system into an electronic signal comprising a plurality of pixels(fig 18, 10); wherein the image sensing device is a solid state image sensing device(col 23, lines 63-66), and wherein the optical image formed by the imaging lens system is converted by the image sensing device into an electronic signal(since a CCD is used in the camera). Nagaoka does not specifically disclose having a minimized aliasing noise characteristic or the optical low pass filter has a predetermined cutoff frequency characteristic that depends on pixel pitch of the image sensing device.

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Regarding minimizing the noise, URYU discloses minimizing the noise of image(page 3, para 0039). It would have been obvious to minimize the aliasing noise characteristic as shown by URYU, in the lens system of a modified Nagaoka, since as shown by URYU, reducing the noise of a CCD image is commonly done so as to improve the image stored. Regarding the pixel pitch, Nagaoka does not disclose an optical low pass filter has a predetermined cutoff frequency characteristic that depends on pixel pitch of the image sensing device. However Okuyama et al. discloses an optical low pass filter has a predetermined cutoff frequency characteristic that depends on pixel pitch of the image sensing device, stating this is done so as to reduce the MTF to zero at a predetermined spatial frequency (col 23, line 65 to col24 to line 67). It would have been obvious to use an optical low pass filter with a predetermined cutoff frequency characteristic that depends on pixel pitch of the image sensing device as shown by Okuyama et al., in the lens system of a Nagaoka, since as shown by Okuyama et al., an optical low pass filter with a predetermined cutoff frequency characteristic that depends on pixel pitch of the image sensing device is commonly used so as to reduce the MTF to zero at a predetermined spatial frequency.(note to the attorney, limitations in the preamble are not given patentable weight, for example claim 18, " telephonic device").

Regarding claim 12, a modified Nagaoka, as detailed in claim rejection 11 above, does not disclose a processor wherein the signal generated by the image sensing device undergoes predetermined digital image processing, and image compression processing by the processor, and is recorded in a memory.

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However, URYU discloses a processor wherein the signal generated by the image sensing device undergoes predetermined digital image processing, and image compression processing by the processor, and is recorded in a memory (page 3, para 0039). It would have been obvious to use a processor wherein the signal generated by the image sensing device undergoes predetermined digital image processing, and image compression processing by the processor, and is recorded in a memory shown by URYU, in the lens system of a modified Nagaoka, since as shown by URYU, a processor wherein the signal generated by the image sensing device undergoes predetermined digital image processing, and image compression processing by the processor, and is recorded in a memory is commonly done for storing the captured image.

Regarding claim 19, Nagaoka discloses the telephonic device is portable (col 47, lines 5-10).

Claims 11, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable Tochigi et al. (U.S. Patent No. 5,917,661) in view of URYU (U.S. Patent Pub. No. 2003/0011690) and Okuyama et al. (U.S. Patent No. 6,144,493).

Regarding claim 11, Tochigi et al. discloses from the object side thereof an imaging lens system that forms an optical image of a subject (fig 1, r1-r4); and an image sensing device that converts the optical image formed by the imaging lens system into an electronic signal comprising a plurality of pixels (fig 1, C); wherein the image sensing device is a solid state image sensing device (col 8, lines 59-

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62), and wherein the optical image formed by the imaging lens system is converted by the image sensing device into an electronic signal(since a CCD is used, this inherently converts the image into an electronic signal). Tochigi et al. does not specifically disclose having a minimized aliasing noise characteristic or a optical low pass filter with a predetermined cutoff frequency characteristic that depends on pixel pitch of the image sensing device. Regarding minimizing the noise of image, URYU discloses minimizing the noise of image(page 3, para 0039). It would have been obvious to minimize the aliasing noise characteristic as shown by URYU, in the lens system of a modified Tochigi et al., since as shown by URYU, reducing the noise of a CCD image is commonly done so as to improve the image stored. Regarding the low pass filter dependant upon the pixel pitch, Okuyama et al. disclose an optical low pass filter with a predetermined cutoff frequency characteristic that depends on pixel pitch of the image sensing device stating this is done so as to reduce the MTF to zero at a predetermined spatial frequency (col 23, line 65 to col24 to line 67). It would have been obvious to use an optical low pass filter with a predetermined cutoff frequency characteristic that depends on the pixel pitch of the image sensing device as shown by Okuyama et al., in the lens system of a Tochigi et al., since as shown by Okuyama et al., an optical low pass filter with a predetermined cutoff frequency characteristic that depends on pixel pitch of the image sensing device is commonly used to limit the spatial frequencies received by the CCD and to reduce the MTF to zero.

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Regarding claim 13, Tochigi et al. discloses two positive lens elements(fig 1, r1-r2, r3-r4), wherein an optical power of the first lens element($\phi = .07109$) is weaker than an optical power of the second lens element($\phi = .08$).

Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tochigi et al. (U.S. Patent No. 5,917,661) in view of URYU(U.S. Patent Pub. No. 2003/0011690) and Okuyama et al.(U.S. Patent No. 6,144,493)as applied to claim13 above, and further in view of Betensky(U.S. Patent No. 6,292,306 B1).

Regarding claim 14, a modified Tochigi et al., as detailed in claim rejection 13 above, does not disclose the two lenses are made from glass. However, Betensky discloses that lenses in a zoom lens system are made from glass(lens table). It would have been obvious to form the lenses from glass as shown by Betensky, in the lens system of a modified Tochigi et al., since as shown by Betensky, lenses are commonly made from glass being this material refracts light as well as provides the necessary rigidity for the lens to maintain its shape.

Regarding claim 15, Okuyama et al. discloses wherein each of the two positive lens elements has two surfaces, and wherein at least one of the surfaces of one of the positive lens elements is an aspherical surface.(fig 1, r1 and Embodiment 1).

Allowable Subject Matter

Claims 1-10, 16, 17, 20-23 are allowed.

The following is an examiner's statement of reasons for allowance: The prior art taken either singularity or in combination fails to anticipate or fairly suggest the limitations of the independent claim, in such a manner that a rejection under 35 U.S.C. 102 or 103 would be proper. The prior art fails to teach a combination of all the claimed features as presented in independent claims 1, 6, 16, 20-23, With the important features being; the mathematical limitations pertaining to the distance from the most object side lens surface to an image plane with the image plane coinciding with the image sensing device; the imaging lens having only two lenses of a specific shape; the mathematical limitations pertaining to the backfocal length or the ratio of the first lens to the overall focal length of the entire system. Therefore claims 1-10, 16, 17, 20-23 are allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

Applicant's arguments with respect to claims 11-15, 18, 19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

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Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Thompson whose telephone number is (703) 305-0881. If the examiner can not be reached his supervisor, Georgia Epps, can be reached on (703) 308-4883.

T.J.T.

5/28/03


JORDAN SCHWARTZ
PRIMARY EXAMINER